

## Global Earth Observation Grid (GEO Grid): Development of an IT infrastructure for earth sciences using satellite data

# Shinsuke Kodama[1]; Ryosuke Nakamura[1]; Naotaka Yamamoto[1]; Hirokazu Yamamoto[1]; Satoshi Tsuchida[1]; Satoshi Sekiguchi[1]

[1] AIST

<http://www.geogrid.org/>

The GEO Grid is a grid technology system to provide securely and rapidly large archives of earth observation satellite data and integrated service with various observation databases and GIS data, and make them easy-to-use for users. The GEO Grid aims at contributing to the solving of global social problems such as environment conservation, resource exploration, natural disaster prevention, and risk management.

The core contents of the system are the observation data from the earth observation satellite sensor (ASTER) of the METI, Japan and geoscientific information, such as geological and environment technology data, accumulated for a long period of time at the National Institute of Advanced Industrial Science and Technology (AIST). As a core technology, the GEO Grid provides international standard compliant grid technology and develops systems.

We present several sample applications using ASTER data developed on the GEO Grid system; pyroclastic flow simulation using ASTER DEM, integration with other satellite images and ground truth data for the accurate global land use change detection and carbon cycle modeling (<http://kushi.geogrid.org/>), and integration with the geologic GIS data.